## REMARKS

The Examiner's Action mailed on August 13, 2003, has been received and its contents carefully considered.

In this Amendment, Applicants have canceled claims 2, 4 and 22, and have amended claims 1, 3, 9, 10, 11, 20, 21, 23, 24, 28 and 29. Claims 1, 20 and 23 are the independent claims. Claims 1, 3, 5-12, 20, 21, and 23-29 remain pending in the application. For at least the following reasons, it is submitted that this application is in condition for allowance.

The Examiner has rejected the claims as being indefinite. It is the Examiner's contention that the independent claims must recite where the conductive pad is located in relation to the hole, the insulating layer and the conducting layer. Without acquiescing to the properness of this rejection, independent claims 1 and 20 have been amended to include the subject matter of canceled claims 4 and 22, respectively, each of which recited that the conductive pad is disposed within the hole and in direct contact with the insulating layer. As such, Applicants' independent claims 1 and 20 now positively recite the location of the pads as requested by the Examiner's Action. Similarly, claim 23 has been amended to recite that the pad is disposed directly over the hole and is completely disposed directly on the dielectric layer, which dielectric layer completely fills the hole to cover the upper surface of the insulating layer exposed by the hole. It is submitted that the claims comply with all official provisions, and it is requested that these rejections be withdrawn.

The Examiner has rejected claims 1, 6-8, and 23-25 as being anticipated by *Meyer et al.* (USP 5,089,880). Because claim 1 has been amended to include the

subject matter of canceled claim 4, which claim was not rejected in view of this reference, the rejections as they pertain to claims 1 and 6-8 have been rendered moot. Further, it is submitted that claims 23-25 are patentably distinguishable over this reference for at least the following reasons.

Applicants' independent claim 23 is directed to a surface laminar circuit board which includes, *inter alia*, an insulating layer, and a sheet of conductive material disposed on an upper surface of the insulating layer. The sheet of conductive material has a hole formed therein which exposes an upper surface of the insulating layer. A dielectric layer is disposed on an upper surface of the conductive material and completely fills the hole so as to cover the upper surface of the insulating layer exposed by the hole. A conductive pad is provided having a major portion thereof disposed directly over the hole and is completely disposed directly on the dielectric layer. This claimed configuration has the advantages discussed in Applicants' specification, and corresponds, for example, to the embodiment shown in Figure 6. This claimed configuration is not disclosed or suggested by the cited reference.

*Meyer et al.* disclose a pressurized interconnection system for semiconductor chips. In particular, this reference discloses a ground wafer 24 being comprised of a lower dielectric layer 72 and an upper dielectric layer 72. The upper and lower dielectric layers 72 sandwich therebetween a conductive core 70. This reference further discloses forming a contact via 38 through the upper and lower dielectric layers 72 and the intermediate conductive core 70. The contact via 38 is then filled with a conductive material, and pads 40 are disposed on top of the conductive material.

However, and in contrast to the present invention, this reference does not disclose or otherwise suggest a hole formed in a sheet of conductive material which exposes an upper surface of an insulating layer. Instead, this reference discloses forming a via through the insulating layers 72. Although the hole exposes a side edge of the insulating layers 72, since the hole extends through the insulating layers 72, neither of the insulating layers have an upper surface which is exposed by the hole.

Moreover, this reference does not disclose or otherwise suggest a dielectric layer that completely fills the hole, as required by claim 23. Instead, this reference discloses at least partially filling the contact vias 38 with a conductive material.

Moreover, this reference does not disclose or otherwise suggest a dielectric layer which covers the upper surface of an insulating layer which is exposed by the hole, as recited by claim 23. That is, since this reference does not disclose that the hole exposes an upper surface of an insulating layer, then this reference can not possibly disclose or suggest a dielectric layer which covers the upper surface of the insulating layer exposed by the hole.

Moreover, this reference does not disclose or otherwise suggest a conductive pad which is completely disposed directly on a dielectric layer, as required by Applicants' independent claim 23. Instead, this reference requires that the pads 40 be disposed at least partially on top of the conductive material located within the contact vias 38 in order to allow these pads to perform their disclosed function, that is, to be able to electrically couple with upper and lower pads 40 disposed on other wafers. Thus, not only does this reference not teach Applicants' claimed invention, but this reference specifically teaches away from the configuration recited within claim 23. It is

thus requested that this claim, and the claims dependent therefrom, be allowed and that this rejection be withdrawn.

The Examiner has rejected claims 2-3, 9-11 and 20-21 as being obvious over *Meyers* in view of *Trask et al.* (USP 5,034,091). Because independent claim 1 has been amended to include the subject matter of dependent claim 4, and independent claim 20 has been amended to include the subject matter of dependent claim 22, which claims were not rejected in view of this cited combination of references, this rejection has been rendered moot.

The Examiner has also rejected claim 5 as being obvious over *Meyer et al.* in view of *Trask et al.*, and further in view of *Higgens Jr.* (USP 5,034,091). Because claim 5 depends from independent claim 1, which claim has been amended to include the subject matter of original claim 4, and which claim was not rejected in view of the cited combination of references, this rejection has been rendered moot.

The Examiner has also rejected claims 26 and 27 as being obvious over *Meyer et al.* As noted above, Applicant's independent claim 23 is submitted to be patentably distinguishable over *Meyer et al.* As such, dependent claims 26 and 27 are submitted to be patentably distinguishable over the cited reference for at least the same reasons as independent claim 23, from which these claims depend, as well as for the additional features recited therein. It is thus requested that this rejection be withdrawn and that these claims be allowed.

The Examiner has also rejected claims 12, 28 and 29 as being obvious over *Meyer et al.* in view of *Arisaka* (USP 5,102,352). Because claim 12 depends from independent claim 1, and because claim 1 has been amended to include the subject

matter of claim 4, which claim was not rejected in view of the cited combination of references, this rejection, as it pertains to claim 12, has been rendered moot. Moreover, claims 28 and 29 are submitted to be patentably distinguishable over the cited combination of references for at least the following reasons.

As noted above, Applicants' independent claim 23 is patentably distinguishable over *Meyer et al.* Furthermore, *Arisaka* only discloses forming socket pins 20 to extend through a laminated board assembly 10, and to have a head having a diameter approximately the same as the diameter of the hole in which the pins 20 are disposed. However, this reference fails to overcome the above noted deficiencies of *Meyer et al.* As such, it is submitted that claims 28 and 29 are *prima facie* patentably distinguishable over the cited references for at least the same reasons as independent claim 23, from which these claims depend, as well as for the additional features recited therein. It is requested that these claims be allowed and that this rejection be withdrawn.

It is submitted that this application is in condition for allowance. Such action and the passing of this case to issue are requested.

Should the Examiner feel that a conference would help to expedite the prosecution of the application, the Examiner is hereby invited to contact the undersigned counsel to arrange for such an interview.

Respectfully submitted,

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Date

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